**Group Members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**atmosphere and Meteorology Project**

3.e.4-6

**General Directions**: Your group will be given three of the Virginia Beach Objectives related to this unit. Your group will be responsible for **researching the objectives, creating a lesson and developing an activity** to teach the three objectives you have been assigned to the rest of the class. Guiding questions have been provided to help you cover each objective. You will be using a PowerPoint slideshow to use as a visual aid to teach the lesson.

**Step 1**: Research your objective using books and resources provided (Databases located at <https://destiny.vbcps.com> and books). Take notes. Be sure to answer the guiding questions in a way that you can easily explain to your classmates. Diagrams, charts and graphs are great tools to visually interpret information. Collect citation information and save to a location you can access (jump drive, H Drive or SharePoint).

**Step 2:** Organize your information so that you can easily share it with others. Develop a PowerPoint presentation with your group to cover your topic. All group members must contribute to the PPT and participate in the presentation. Use the following format as a template for your PowerPoint.

PowerPoint format:

Slide 1-State Key Concept/Topic

Slide 2:  State objective

Slide 3-4:  Guiding Question with 3-5 bullet points

Slide 5:  State Objective

Slide 6-7:  Guiding Question with 3-5 bullet points

Slide 8:  State Objective

Slides 9-10:  Guiding Question with 3-5 bullet points

Slide 11:  Bibliography

Relevant photos/pictures throughout

**Step 3:** Develop activity to be used by classmates during lesson. All group members must contribute to the activity.

Develop a climate graph for students to partially label. Leave some labels blank for students to fill in.

Develop a climate change table that incorporates objectives 3.e.5 and 3.e.6.

**Step 4:** As a group, practice teaching your lesson. Remember to use the PowerPoint as a guide but do not read it to the class

**ES3.e Climate**

**3.e.4 Read and interpret climate graphs.**

*What is a climate graph?*

*How does position on the Earth impact climate?*

*What two properties are plotted on a climate graph?*

**3.e.5 Describe possible factors leading to global climate changes (short and long term).**

*What is global climate change?*

*What are long term factors that contribute to global climate change?*

*What are short term factors that contribute to global climate change?*

**3.e.6 Analyze the array of climate feedback mechanisms (cause and effect) that control the Earth’s temperature over time.**

*How has the Earth’s atmospheric temperature changed over time?*

*What are some events or things that have occurred that coincide with global changes in climate?*

*Are there naturally occurring factors that can impact global climate changes?*

*What are human generated factors that can impact global climate changes?*

Fast Facts:

-Human activities have increased the carbon dioxide content of the atmosphere.

-The ability of Earth’s atmosphere to absorb and retain heat is affected by the presence of gases like water vapor and carbon dioxide.

-Man-made chemicals have decreased the ozone concentration in the upper atmosphere.